

Amendments to the Claims

1. (*Currently Amended*) A semiconductor device (201) comprising a functional device (207) characterized by an integral characterization unit (203) operable to provide characterization data for the device (201).
2. (*Currently Amended*) A semiconductor device (201) as claimed in claim 1, wherein the integral characterization unit (203) is operable to provide a control signal to control an operating parameter of the device (201).
3. (*Currently Amended*) A semiconductor device (201) as claimed in claim 2, wherein the integral characterization unit (203) is operable to provide a control signal to control a voltage supply of the device (201).
4. (*Currently Amended*) A semiconductor device (201) ~~as claimed in claims 2 or 3, as~~ claimed in claim 2, wherein the integral characterization unit (203) is operable to provide a control signal to control a clock signal of the device (201).
5. (*Currently Amended*) A semiconductor device (201) ~~as claimed in any one of claims 1 to 4, as~~ claimed in claim 1, wherein the functional device (207) is operable to receive test data.
6. (*Currently Amended*) A semiconductor device (201) as claimed in claim 5, wherein the functional device (207) is operable, in response to said test data, to produce a test response.
7. (*Currently Amended*) A semiconductor device (201) ~~as claimed in claim 5 or 6, as~~ claimed in claim 5, wherein the functional device (207) is operable to receive a control signal from said integral characterization unit (207).

8. (*Currently Amended*) A semiconductor device (201) as claimed in claim 4, wherein the integral characterization unit (203) is operable to provide the clock signal externally to said device (201).

9. (*Currently Amended*) A semiconductor device (201) ~~as claimed in any one of the preceding claims,~~ as claimed in claim 1, comprising a test interface, and wherein the integral characterization unit (207) is operable to receive data through the test interface.

10. (*Currently Amended*) A semiconductor device (201) ~~as claimed in any one of the preceding claims,~~ as claimed in claim 1, further including software control means operable to provide control data to the integral characterization unit (207).

11. (*Currently Amended*) A semiconductor device (201) ~~as claimed in any one of the preceding claims,~~ as claimed in claim 1, further including hardware control means operable to provide control data to the integral characterization unit (207).

12. (*Currently Amended*) A semiconductor device (201) ~~as claimed in claim 10 or 11,~~ as claimed in claim 10, wherein the control means is operable to provide control data to the integral characterization unit (207) through a test interface of the device (201).

13. (*Currently Amended*) A semiconductor device (301) as claimed in claim 5, further including built in test hardware (305) operable to provide test data to the functional device (303).

14. (*Currently Amended*) A semiconductor device (301) as claimed in claim 13, wherein the built in test hardware (305) is IEEE 1149.1 compliant.

15. (*Currently Amended*) A semiconductor device (301) ~~as claimed in claim 13 or 14,~~ as claimed in claim 13, comprising a test interface and wherein the built in test hardware (305) is operable to receive test data through a test interface of the device (301).

16. (*Currently Amended*) A semiconductor device (301) ~~as claimed in any one of claims 13 to 15, as claimed in claim 13,~~ wherein the built in test hardware (305) is operable, in response to said test data supplied to said functional device (303), to provide test response data.

17. (*Currently Amended*) A semiconductor device (301) as claimed in claim 16, wherein the built in test hardware (305) is operable to output said test response data from the device (301).

18. (*Currently Amended*) A semiconductor device (401) ~~as claimed in any one of the preceding claims~~ as claimed in claim 1, further including a memory module (413) which is operable to store characterization data of the device (401).

19. (*Currently Amended*) A semiconductor device (401) ~~as claimed in any one of the preceding claims,~~ as claimed in claim 1, further including a controller (411) which is operable to provide control data to the integral characterization unit (407).

20. (*Currently Amended*) ~~A semiconductor device (401) as claimed in claim 19 when appended to claim 13, wherein the controller (411) is operable to provide control data to the built in test hardware.~~

A semiconductor device comprising

a functional device, having an integral characterization unit providing characterization data for the device and to the functional device receiving test data,

built-in test hardware providing test data to the functional device, and

a controller providing control data to the integral characterization unit and to the built-in test hardware.

21. (*Currently Amended*) ~~A semiconductor device (401) as claimed in claim 19 when appended to claim 18, wherein the controller (411) is operable to communicate with the memory module (413).~~

A semiconductor device as claimed in claim 1, further including,

a memory module that stores characterization data of the semiconductor device,
a controller that provides control data to the integral characterization unit, wherein
the controller communicates with the memory module.

22. (*Currently Amended*) A semiconductor device (401) as claimed in claim 19, wherein the controller (411) is operable to receive data over a test interface of the device (401).

23. (*Currently Amended*) A method of characterizing a semiconductor device (201) comprising a functional device (207) characterized by providing an integral characterization unit (203) in the semiconductor device (201), and obtaining characterization data from the integral characterization unit (203).

24. (*Currently Amended*) A method as claimed in claim 23, further comprising providing a control signal to control an operating parameter of the device (201).